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Summary and Implications

Three groups of culled market cows were fed high concentrate rations at three locations in Iowa to demonstrate the possibilities of finishing for the "White Fat Cow" market. Final shrunk weights ranged from 1378 to 1609 pounds, while average daily gains ranged from 2.78 to 3.87 pounds daily on a 70 to 90 day program. Dry matter feed efficiency on a shrunk basis ranged from 9.98 to 12.03 pounds per pound of gain. From 74 to 89 percent of the cows qualified in the "Premium White Fat" grades. Net profit ranged from $52 to $89 per head, but it is important to realize that net profit is very dependent on buy sell margin and these demonstration feed outs were done in the time frame where very positive seasonality prices existed.

Introduction

Marketing cows and other nonproductive breeding stock from the cow herd accounts for 20% of the gross income in cow-calf operations. Achieving additional gross income from these marketings have the potential of improving the profit picture. In recent years fed cows that reach the market with the finish that is designated as "white fat" bring premiums over normal cows that are sold into the cutter, canner, utility or commercial grades. This demonstration project was devised to investigate the efficiency, marketing and potential profit of feeding normally culled breeding cows for the "white fat" market.

Materials and Methods

The Iowa Beef Center, in conjunction with the Tri-County Steer Carcass Futurity, Iowa Lakes Community College, ISU Extension and a producer, Marckmann-Wallace, conducted three feeding demonstration in 2002-03 to examine whether high energy feeding programs would achieve white fat status in market cows. All cows in this demonstration project were consigned by local producers. Forty-eight cows were started on feed with a Tri-County cooperating feedlot, 27 cows were started at the Iowa Lakes Community College feedlot and 27 cows were fed at the Marckmann-Wallace feedlot. A great deal of variation existed at the beginning for weight and condition score (see table 1). A beginning market value was assigned to each individual cow by staff based on condition, estimated dressing percent and appeal to the live market.

Cows were delivered in early November and December and implanted upon feedlot arrival with Revalor H. Vaccinations included using a modified live program, this included the overeating toxoids. Cows were started on feed slowly using lower energy rations at the start and worked up to typical finishing rations containing MGA and an ionophore after 30 days. Final rations contained 55 to 61 megacalories per hundred pounds of dry matter (see rations in table 2).

Each of the three groups experienced problems with cows that either entered the test unsound or became that way during the feeding period, were unacceptable from a disposition standpoint or were open yearling heifers, thus not belonging in this project. It is imperative that producers be selective in the type of market cows fed for this type of market. Besides having the potential for muscle thickness and good depth of body, cows should be structurally sound, healthy and thrifty.

The two southwestern Iowa groups were harvested in January and February while the remaining northwest Iowa group was harvested in March. American Foods Group in Green Bay, Wisconsin was the cooperating harvest facility. Data collected at the harvest facility was hot carcass weight, fat cover between the 12th and 13th rib, ribeye area, an estimate of percent kidney, heart and pelvic fat, calculated yield grade, and the plant house grade and price.

Results and Discussion

Weight gains as shown in table 3 varied depending on the energy level fed, however, average daily gain (ADG) exceeded the expectations of clientele involved in the demonstration. These demonstration beef cows had shrunk ADG from 2.78 to 3.87 lbs. As expected, feed efficiency was poor with the three groups of cows averaging 10.86 lbs of feed dry matter per pound of gain with a range of 9.98 to 12.03. However, this low feed efficiency should be expected due to large maintenance requirements and predominantly carcass fat gain.

The Tri-County and Iowa Lakes Community College groups were ultrasounded for carcass traits shortly after arrival and averaged .20" and .16" for backfat, respectively. From a carcass perspective, the cows developed significant fat cover in a relative short feeding period (see table 4), going from .20" to over .60" in 70 to 90 days. Management of the marketing program is vital in order to keep cows from becoming overly fat, thus suffering financially from Yield Grade discounts.

Nearly 90 percent of the cows graded in the premium price categories. Depending on the group from 74% to 89% of the cows made it into the #1 or #2 Premium White Fat grades. These premium grades were achieved in 70 to 90 days.

Due to the low feed efficiency, the feed cost per hundredweight ranged from $47.84 to $56.82. Additionally, non-feed cost was high in comparison to most other finishing cattle programs. This is due to many factors, including: increased transportation costs (fewer cattle per truck load) and higher yardage fees due to additional bunk space requirements on a per head basis. However, there are certain parts of the cattle marketing cycle when added returns are possible as seen in this demonstration. The average net profit for these three groups of cows averaged over $72 per head. But keep in mind these cows were fed from November to March and generally the price seasonality is favorable during that time frame and certainly was in this project.

Acknowledgments

The Iowa Quality Cull Cow Project was a joint effort between the Iowa Beef Center, the Tri-County Steer Carcass Futurity Coop and Iowa Lakes Community College. The three cull groups were fed at the Bentley East Feedlot of Macedonia, Iowa; the Delmar Marckmann Feedlot of Greenfield, Iowa; and the Iowa Lakes Community College Feedlot near Emmetsburg, Iowa. The authors wish to thank Neil Williamson, ILCC, Ron Irvin, retired ISU extension and Tri-County staff for data collection and processing and the staff at American Foods Group at Green Bay, WI for harvesting the cattle and providing financial support for transportation of the cows to their facility.

Table 1. Beginning head counts, market values, weights and condition scores.

Item	NW Iowa Extension & Iowa Lakes Comm. College	Marckmann – Wallace Beef Cows	Tri-County Beef Cows
No of Head	27	27	48
Market value $/cwt	$36.40	$34.57	$36.19
Average Delivery Wt	1121 (range 724-1662)	1316 (range 1090-1605)	1254 (range 896-1630)
Average Condition Score	4.2 (range 2-8)	4.6 (range 3.7-6)	5.2 (range 3-8)

Table 2. Rations fed to market cows at three locations.

NW Iowa Extension & Iowa Lakes Comm. College				
Item	Ration 1	Ration 2	Ration 3	Ration 4
Days on Feed	1-10	11-20	21-30	30-90
% As Fed Basis				
Hay	12.5	12.5	12.5	6.5
High Moisture Corn	25.0	36.0	49.0	63.0
Corn Silage	60.0	49.0	36.0	28.0
Soybean Meal	2.5	0.0	0.0	0.0
Urea Supplement	0.0	2.5	2.5	2.5
NE gain Mcal/cwt, DM basis	51	54	57	61.5
% Crude Protein, DM basis	12	12	12	11.5
Marckmann – Wallace Rations				
Item	Ration 1	Ration 2	Ration 3	Ration 4
Days on Feed	1-10	11-20	21-30	30-90
% Dry Matter Basis				
Corn: 85% dry matter @ $2.30/bu	0 %	0 %	7.7 %	47.4 %
Earlage: 79.5% dry matter @ $65.53/ton	67.2 %	79.2 %	82.4 %	42.3 %
Haylage: 60% dry matter @ $49.41/ton	29.4 %	18.3 %	6.0 %	6.2 %
Supplement: 80% dry matter @ $259/ton	3.4 %	2.4 %	3.3 %	3.4 %
Limestone: 92% dry matter @ $60/ton	0 %	0.1 %	0.6 %	0.7 %
NE gain Mcal/cwt	48	52	56	61
% Concentrate, DM basis	56 %	65 %	76 %	84 %
% Crude Protein, DM basis	11.6 %	10.7 %	10.4 %	10.4 %
Tri-County Feedlot Rations				
Item	Ration 1	Ration 2	Ration 3	Ration 4
Days on Feed	1-10	11-20	21-30	30-90
% Dry Matter Basis				
Corn: 85% dry matter @ $2.30/bu	27.1 %	34.4 %	44.8 %	57.5 %
Ground Hay: 80% dry matter @ $85/ton	41.4 %	33.1 %	22.4 %	12.0 %
Corn Silage: 35% dry matter @ $25/ton	8.5 %	8.7 %	8.7 %	5.7 %
Wet Corn Gluten: 60% dry matter @ $68.39/ton	21.9 %	22.4 %	22.3 %	22.4 %
Supplement: 92% dry matter @ $295/ton	1.1 %	1.1 %	1.1 %	1.1 %
Limestone: 92% dry matter @ $100/ton	0 %	0.3 %	0.6 %	1.0 %
NE gain Mcal/cwt	49	52	56	61
% Concentrate, DM basis	53 %	61 %	72 %	83 %
% Crude Protein, DM basis	13.8 %	13.6 %	13.2 %	13.0 %

Table 3. Gain, efficiency and gain cost of market cows at three locations.

Item	NW Iowa Extension & Iowa Lakes Comm. College	Marckmann – Wallace Beef Cows	Tri-County Beef Cows
Days on Feed	94	87	69 or 90
Feedlot Weight	1411	1669	1616
Feedlot Weight, Shrunk	1378	1609	1548
ADG, Shrunk	2.78	3.78	3.87
Feed Efficiency, Shrunk	12.03	9.98	10.57
Average NEg Mcal/cwt	54.6	58.0	59.3
Average Ration Dry Matter	58%	79%	69%
Feed cost/cwt shrunk wt	$56.82	$47.84	$56.62
Total cost/cwt shrunk wt	$87.81	$73.20	$84.96

Table 4. Carcass data on market cows at three locations.

Item	NW Iowa Extension & Iowa Lakes Comm. College	Marckmann – Wallace Beef Cows	Tri-County Beef Cows
Hot Carcass Wt	787.1	917	880
Dress % Feedlot Wt	55.6%	54.9%	54.3%
Fat Cover, Inches	.51	.66	.64
Ribeye area, sq.in.	12.3	12.6	12.9
%Kidney, heart & pelvic fat	1.78	1.8	2.0
Calculated Yield Grade	3.19	3.97	3.14
% Yield Grade 3 or less	92.6%	67%	57%
% Yield Grade 4	7.4%	22%	25%
% Yield Grade 5	0%	11%	18%
House or USDA Quality Grades			
# 1 Premium White Fat	66.7%	89%	70%
# 2 Premium White Fat	7.4%	-	12%
Boning Utility/Dark Cutter	7.4%	7%	2%
Holstein Choice	-	-	2%
Low Choice	11.1%	4%	2%
Select +	3.7%	-	2%
Standard	-	-	2%
Cutter/Canner	3.7%		
Unknown/Not Reported	-	-	8%

Table 5. Feed and non-feed costs and profit in feeding programs.

Item	NW Iowa Extension & Iowa Lakes Comm. College	Marckmann – Wallace Beef Cows	Tri-County Beef Cows
Carcass Price $/cwt	$89.98	$85.59	$84.57
Live Price Shrunk wt $/cwt	$51.41	$48.77	$48.39
Feed cost/cwt shrunk wt	$56.82	$47.84	$56.62
Non-feed cost/cwt shrunk wt	$30.99	$25.36	$28.34
Total cost/cwt shrunk wt	$87.81	$73.20	$84.96
Profit $/head	$74.06	$89.72	$52.71